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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/530,310	09/27/2000	Rene Jepsen	CE30382 P	5409

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EXAMINER	
HOANG, THAI D	

ART UNIT	PAPER NUMBER
2667	5

DATE MAILED: 02/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/530,310	JEPSEN ET AL.	
	Examiner	Art Unit	
	Thai D Hoang	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *Application filed on 09/27/2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-11* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

Claim 9 is objected to because of the following informality:

The statement "broadband signals (**503**)" recited in claim 9 should be changed to --broadband signals (**501**)-- for matching with figure 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5 and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 3 recite the first direction uses "spread energy signals" and "time continuous signal with low power variation", which are applied in the CDMA scheme. In contrast, claims 4 and 5 recite the first direction use TDMA scheme and OFMDA scheme. Therefore, it is not clear how "spread energy signals" and "time continuous signal with low power variation" applied in the TDMA and OFDMA schemes as recited in claims 2-5. Similarly, the second direction uses "concentrated energy signals" and "time discontinuous signal with high peak power", which are recited in claims 2-3, are applied in TDMA or FDMA/OFDMA scheme. In contrast, claims 4 and 5 recite the second direction uses CDMA scheme. Therefore, it is not clear how "concentrated energy

signals" and "time discontinuous signal with high peak power" applied in the CDMA scheme as recited in claims 2-5.

Similarly, claim 8 recites "first transmission scheme using broadband signals (401) with low spectral energy density and said second transmission scheme using narrowband signals (403) with high spectral energy density." However, the "broadband signals (401) with low spectral energy density" could not be applied in TDMA or OFDMA scheme as recited in claim 4-5; and the "second transmission scheme using narrowband signals (403) with high spectral energy density" could not be applied in CDMA scheme as recited in claims 4-5. Claims 9-10 are rejected because they depend on rejected claim 8.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4,6, 8 and 10-11 are rejected under 35 U.S.C. 102(b) as being unpatentable by over Dent, US Patent No. 5,539,730.

Regarding claims 1 and 11, Dent discloses a method and system for TDMA/FDMA/CDMA hybrid radio access. Dent teaches that the system comprises a hub base station 400 and a plurality of mobile users 420 (figs. 9-11), wherein the base station communicates with a first and second mobile stations simultaneously by using TDM in a downlink direction and FDMA/CDMA in an uplink direction (means for

transmitting between the first central station and a first remote unit in a first portion of the frequency spectrum in a first direction using a first transmission scheme; means for transmitting simultaneously between the fist central station and a second remote unit in the first portion of the frequency spectrum in a second direction using a second transmission scheme.)

Regarding claims 2-4 and 8, as best understood, Dent discloses that the system could be able to operate in a CDMA method for uplink and TDMA for the downlink; col. 5, lines 60 – col. 6, lines 26 (first transmission scheme using spread energy signals sand said second transmission scheme using concentrated energy signals; and first transmission scheme using a substantially time continuous signal with low power variation, and said second transmission scheme using a time discontinuous signal with high peak power during transmission bursts.)

Regarding claim 6, Dent teaches that the system uses DFMA/CDMA scheme in the uplink and TDMA scheme in the downlink; col. 1, lines 55-59; col. 5, lines 39-40; col. 5, line 60-col. 6, line 1. Therefore it indicates that the base station uses different frequency for each mobile unit in each direction; see figs. 2-5 (a second portion (201) of said frequency spectrum being dedicated to communication in said first direction and a third portion, (206) of said frequency spectrum being dedicated to communication in said second direction)

Regarding claim 10, since Dent's system could be able operated in TDMA/FDMA/CDMA hybrid scheme, therefore, it is inherently comprised a means for

removing narrowband signals (TDMA or FDMA) when receiving the broadband signals (CDMA); see figs. 2-5, 7-8.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, US Patent No. 5,539,730 in view of Thielecke et al., US Patent No. 5,719,899, hereafter referred to as Dent and Thielecke respectively.

Regarding claim 5, as best understood, Dent does not disclose that the system uses CDMA scheme for uplink and OFDMA scheme for downlink. However, Thielecke discloses a multiple access digital transmission system, which uses FDMA scheme in the downlink and CDMA scheme in the uplink; col. 4, lies 56-59. OFDMA scheme is well known in the art. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply OFDMA in stead of FDMA scheme in the downlink as disclosed by Thielecke in order to improve quality of service because the interference of the signal is reduced.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dent, US Patent No. 5,539,730 in view of Hunsinger et al., US Patent No. 5,949,813, hereafter referred to as Dent and Hunsinger respectively.

Regarding claim 9, as best understood, since Dent's system could be able operated in TDMA/FDMA/CDMA hybrid scheme; therefore, the power of the broadband signals in the system is inherently uneven because of interference between a strong power signals (narrowband signals) and a low power signals (broadband signals). However, in order to show clearly, Hunsigner discloses a method and system for simultaneously broadcasting and receiving digital and analog signals. Hunsigner teaches that the interference between narrowband signals and broadband signals creates unevenly broadband signal; see figs. 6a-b, col. 9, lines 13-17.

Allowable Subject Matter

Claim 7 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent No. 5,812,947 A, Dent discloses "Cellular/satellite communications systems with improved frequency re-use"

US Patent No. 6,122,270 A, Whinnett et al. disclose "Communications system and a method therefor"

US Patent No. 5,793,757 A, Uddenfeldt discloses "Telecommunication network having time orthogonal wideband and narrowband systems"

US Patent No. 5,790,549 A, Dent discloses "Subtractive multicarrier CDMA access methods and systems"

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D Hoang whose telephone number is (703) 305-3232. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Thai Hoang

CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 2/2/04